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EXAMINER

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Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/879,688
Filing Date: June 12, 2001
Appellant(s): KIM ET AL.

MAILED

AUG 01 2007

Technology Center 2100

Paul J. Farrell
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 06/11/2007 appealing from the Office action mailed 01/31/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Citation #4 ("Text proposal regarding TFCI coding for FDD", TSGR1#7(99)D69, August 30-September 3, 1999)

Stephen B. Wicker, Error Control Systems for Digital Communication and Storage,
Prentice-Hall, 1996, pages 149-155

Citation #7 ("Harmonization impact on TFCI and New Optimal Coding for extended
TFCI with Almost no Complexity increase", TSGR#6(99)970, July 13-16, 1999)

6,744,744

TONG et al.

6-2004

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148
USPQ 459 (1966), that are applied for establishing a background for determining
obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over
Citation #4 ("Text proposal regarding TFCI coding for FDD", TSGR1#7(99)D69, August
30-September 3, 1999) in view of Wicker (Stephen B. Wicker, Error Control Systems for
Digital Communication and Storage, Prentice-Hall, 1996, pages 149-155).

35 U.S.C. 103(a) rejection of claims 8 and 19.

Citation #4 teaches an orthogonal sequence generator for creating a plurality of biorthogonal sequences having a length of at least 2^n , where $n=5$, and outputting a biorthogonal sequence selected from the biorthogonal sequences by first information bits of the TFCI (The Table on the second page of Citation #4 clearly suggests a means for generating the Orthogonal Variable Spreading Factor OVSF Code sequence $C_{32,1}$ to $C_{32,32}$); a mask sequence generator for creating a plurality of mask sequences, and outputting a mask sequence selected from the mask sequences by second information bits of the TFCI (Table 1 on the third page of Citation #4 clearly suggests a means for creating a plurality of mask sequences); an adder for adding a biorthogonal sequence from the orthogonal sequence generator and a mask sequence from the mask sequence generator (Figure 2 on the third page of Citation #4 teaches a adder Σ for adding a biorthogonal sequence $C_{32,2}$, $C_{32,3}$, $C_{32,5}$, $C_{32,9}$ and $C_{32,17}$ from the orthogonal sequence generator and a mask sequence, Mask 1-4, from the mask sequence generator); and a puncturer for performing puncturing on the sequence of 2^n symbols from the adder so as to output the sequence of m symbols (Figure 1 on the third page of Citation #4 teaches a puncturer for performing puncturing on the sequence of 32-bit symbols from the adder so as to output a sequence of 32-bit symbols). In addition, the Applicant admits that (48, 10) Reed-Muller codes are Prior Art in line 28 on page 3 to line 18 on page 4 of the Applicant's specification.

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However Citation #4 does not explicitly teach the specific use of a second order Reed-Muller code with $2^n > 48$, that is a 64 bit Reed-Muller code or a 128 bit Reed-Muller code or a 256 Reed-Muller code, etc. since any of those codes satisfy $2^n > 48$. Note: the only thing that the Prior Art of Record does not teach is 64-bit or greater Reed Muller code for generating the (48, 10) code.

Wicker, in an analogous art, teaches use of a second order Reed-Muller code with $2^n > 48$ (Table 7-1 on page 154 of Wicker where $n=6$ and $64=2^n > 48$).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Citation #4 with the teachings of Wicker by including use of a Reed-Muller code with $2^n > 48$. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a Reed-Muller code with $2^n > 48$ would have provided increased error protection (lines 10-15 on page 4 in the Applicant's admitted Prior Art teach that error correction performance is increased, that is; as is notoriously well known in the art, error correction capabilities increase with increases in redundancy).

Claims 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Citation #4 ("Text proposal regarding TFCI coding for FDD", TSGR1#7(99)D69, August 30-September 3, 1999), Wicker (Stephen B. Wicker, Error Control Systems for Digital Communication and Storage, Prentice-Hall, 1996, pages 149-155) and Tong; Wen et al. (US 6744744 B1, hereafter referred to as Tong) in view of Citation #7 ("Harmonization

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impact on TFCI and New Optimal Coding for extended TFCI with Almost no Complexity increase", TSGR#6(99)970, July 13-16, 1999).

35 U.S.C. 103(a) rejection of claims 41 and 43.

Citation #4, Wicker and Citation #7 substantially teaches the claimed invention described in claims 25 and 29 (as rejected above). In addition, Figure 5 in Citation #7 teaches selection of specific Walsh codes and Figure 2 in Citation #4 teaches an all 1's generator.

However Citation #4, Wicker and Citation #7 do not explicitly teach the specific use of the specific Walsh Codes in claims 41 and 43.

The Examiner asserts that one of ordinary skill in the art at the time the invention was made would know that there are only a finite number of 64-bit Walsh codes to select from and hence selection of another finite number of Walsh code is an obvious variation.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Citation #4, Wicker and Citation #7 by including use of the specific Walsh Codes in claims 41 and 43. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of the specific Walsh Codes in claims 41 and 43 would have provided a simple decoding procedure because of the natural extension (page 5 of Citation #7).

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35 U.S.C. 103(a) rejection of claims 42 and 44.

Since claim 42 substantially recites the same language as in claim 31 the Examiner refer the Applicant to the Non-Final Action filed 01/19/2006 for the rejection of claim 31.

The rejections to claims 9, 20, 25 and 29-40 are withdrawn.

Allowable Subject Matter

Claims 9 and 20 objected to as being dependent upon respective rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the respective base claims and any intervening claims.

Claims 25, 29-40 are allowed.

(10) Response to Argument

Section 1A starting on page 7 and ending on page 9 of the Appellant's Appeal brief basically outlines prosecution history and what the Appellant believes are errors in the prosecution history. The Examiner asserts such issues are not subject matter for Appeal and although the Examiner has not scrutinized in detail each and every one of the Appellant's issues; one of the Appellant's issues is perplexing. On page 9, lines 6-11 in the Appellant's Appeal Brief, the Appellant states, "This brings us to the third conflicting error. In the Claim Rejections section of the Office Action the Examiner stated that Claims 8 and 19 are rejected under § 103(a), but this time directed Appellant

to the August 28, 2006 Office Action. As was previously stated, the August 2006 Office Action contained the rejection directing Appellant to the January 2006 Office Action, which during the interim between January 2006 and August 2006, an allegedly new ground for rejection was presented”.

The Examiner has looked up the Non-Final Rejection filed 08/28/2006 and the Non-Final Rejection filed 08/28/2006 of record is complete containing the current Grounds of rejection and does not refer back to any previous Office Action. The Examiner has cut and pasted the grounds of rejection from the Non-Final Rejection filed 08/28/2006 and has placed them in the Section 9, Grounds of Rejection updating it to address Appellant's current arguments without changing the grounds of rejection so that the Appellant can find all of the current grounds of rejection in the current Examiner's Answer.

The Examiner would also like to point out that the only Office Action that refers back to “the January 2006 Office Action” in the Final Rejection filed 06/29/2006, which does not have the current grounds of rejection in it.

As per Section 1B starting on page 9 and ending on page 10 of the Appellant's Appeal brief: If the Appellant is addressing the grounds of rejection in the Final Rejection filed 06/29/2006, then the Appellant is ignoring the current ground of rejection in the Non-Final Rejection filed 08/28/2006 since the Final Rejection filed 06/29/2006 is the only Office action of record that refers back to “the January 2006 Office Action”.

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As per Section 1C starting on page 10 and ending on page 11 of the Appellant's Appeal brief, the following statement fully characterizes the Appellant's arguments: "Appellants adamantly protest the Examiner's mischaracterization of Appellants' statements to fit the holes in the Examiner's rejections".

Claims 9 and 20 were rejected in the Non-Final Rejection filed 08/28/2006 using Citation #4 ("Text proposal regarding TFCI coding for FDD", TSGR1#7(99)D69, August 30-September 3, 1999) and Wicker (Stephen B. Wicker, Error Control Systems for Digital Communication and Storage, Prentice-Hall, 1996, pages 149-155) in view of Tong; Wen et al. (US 6744744 B1, hereafter referred to as Tong).

Tong is not used to fill in arguments, but is actually part of the current grounds of rejection. As far as characterizing the puncturing patterns in claims 9 and 20, the puncturing patterns are what they are and they are substantially uniform puncturing patterns as taught in Tong.

As per Section 1D starting on page 11 and ending on page 12 of the Appellant's Appeal brief, the following statement fully characterizes the Appellant's arguments: "Appellants continue to maintain that the term "substantially uniform maximal minimum distance puncturing patterns" is unknown to the Appellants. In addition, Appellants respectfully submit that the use by the Examiner of the term "substantially uniform maximal minimum distance puncturing patterns" is improper, until and unless proper support for its use is presented by the Examiner".

Proper support for the term "substantially uniform maximal minimum distance puncturing patterns" can be found in the current grounds of rejection in the Non-Final Rejection filed 08/28/2006, which is rejected using Tong; Wen et al. (US 6744744 B1). Tong, in an analogous art, teaches use of uniform maximal minimum distance puncturing patterns (Col. 1, lines 36-40 and col. 9, lines 24-26 in Tong teaches that increasing or maximizing the minimum puncturing distance so as to come as close as possible to uniformly puncturing bits is not only desirable but near optimal; Note: maximizing minimum puncturing distance leads to substantially uniform puncturing).

On page 12, paragraph 3 of the Appellant's Appeal brief, the Appellant contends, "In spite of Appellants' request that the Examiner define the terms of the claims in accordance with the written description, the Examiner continues to base the arguments and rejections on these unsupported conclusions and definitions".

The Examiner does not define anything, the definition of "substantially uniform maximal minimum distance puncturing patterns" can be found in the current grounds of rejection in the Non-Final Rejection filed 08/28/2006, which is rejected using Tong; Wen et al. (US 6744744 B1).

Section 2 starting on page 13 and ending on page 14 of the Appellant's Appeal brief basically provides a summary of the limitations in claims 8 and 19.

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As per Section 2A starting on page 14 and ending on page 14 of the Appellant's Appeal brief, the Title of Section 2A fully characterizes the Appellant's arguments: "Since neither Citation #4 nor Wicker teach or disclose (48,10) coding, neither reference, nor any combination thereof, can be used to render obvious Claims 8 and 19".

The Applicant admits that (48, 10) Reed-Muller codes are Prior Art in line 28 on page 3 to line 18 on page 4 of the Applicant's specification. Citation #4 along with Wicker teach how to generate a Prior Art (48, 10) Reed-Muller by puncturing a larger

Reed-Muller code. **The combined Prior Art of record teaches each and every limitation in claims 8 and 19.**

As per Section 2B starting on page 14 and ending on page 15 of the Appellant's Appeal brief, the following statement fully characterizes the Appellant's arguments: "The Examiner has failed to show that each and every element of Claims 8 and 19, and in as complete detail as is contained therein, are taught in or suggested by the prior art".

Section 2B fails to recite any limitation that is not taught in the prior Art of Record. The Examiner refers the Appellant to the current 103 rejection of claims 8 and 19 in the Grounds of Rejection section of this Examiner's answer.

As per Section 3 starting on page 15 and ending on page 15 of the Appellant's Appeal brief, the appellant provides no new arguments.

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As per Sections 4-7 starting on page 15 and ending on page 21 Appellant's Appeal brief are mute.

The rejections to claims 9, 20, 25 and 29-40 are withdrawn.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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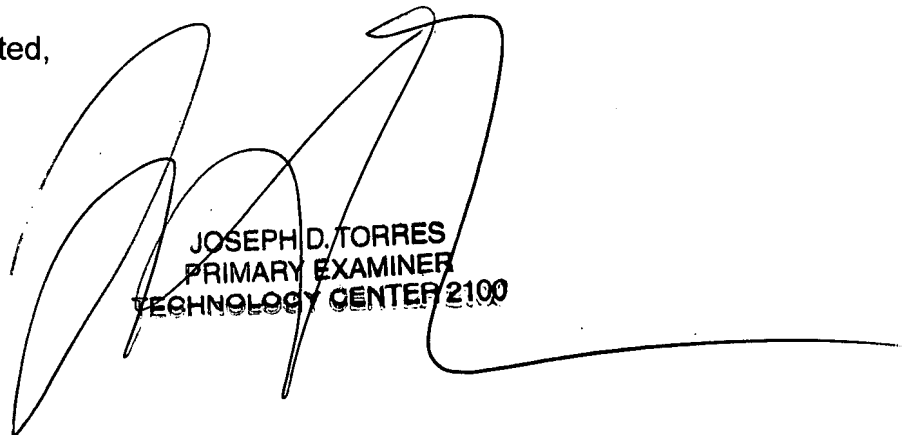
For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Joseph D. Torres

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